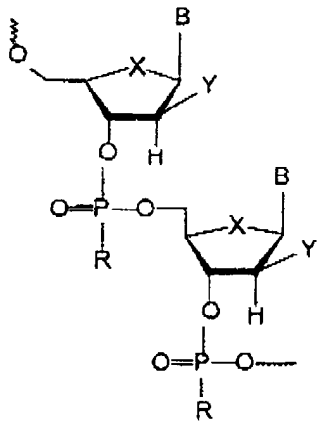
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (currently amended): ~~The composition of claim 1,~~ A composition to selectively prevent gene transcription and expression in a sequence-specific manner; which comprises an effective amount of at least one oligonucleotide selected from the group consisting of an oligonucleotide consisting of β-arabinose sugars hybridizing to a single stranded RNA to induce RNase H activity; and an oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring with halogen, alkyl, CH_2F, CF_3, SCH_3, allyl, amino, aryl, alkoxy, or azido and hybridizing to duplex DNA/DNA or DNA/RNA to form a triple helical complex, in association with an acceptable carrier, wherein said oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring has the formula:



wherein,

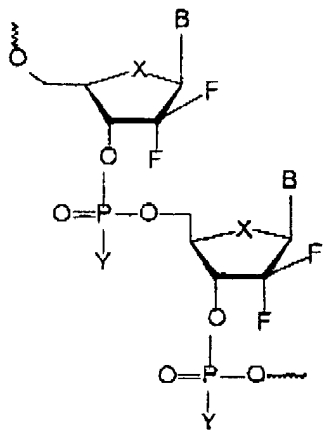
B is selected from the group consisting of adenine, guanine, uracil, thymine, cytosine, inosine, and 5-methylcytosine;

Y at the 2' position of the sugar ring is selected from the group consisting of a halogen ~~(fluorine, chlorine, bromine, iodine)~~, alkyl, ~~alkylhalide (e.g., CH_2F~~, $\underline{CF_3}$~~)~~, ~~alkylsulfhydryl (-SCH_3)~~, allyl, amino, aryl, alkoxy, and azido;

R at the internucleotide phosphate linkage is selected from the group consisting of oxygen, sulfur, methyl, amino, alkylamino, dialkylamino (the alkyl group having one to about 20 carbon atoms), methoxy, and ethoxy; and

X at the furanose ring (position 4') is selected from the group consisting of oxygen, sulfur, and methylene (CH_2).

Claim 3 (currently amended): ~~The composition of claim 1,~~ A composition to selectively prevent gene transcription and expression in a sequence-specific manner, which comprises an effective amount of at least one oligonucleotide selected from the group consisting of an oligonucleotide consisting of β-arabinose sugars hybridizing to a single stranded RNA to induce RNase H activity; and an oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring with halogen, alkyl, CH_2F, CF_3, SCH_3, allyl, amino, aryl, alkoxy, or azido and hybridizing to duplex DNA/DNA or DNA/RNA to form a triple helical complex, in association with an acceptable carrier, wherein said oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring has the formula.



wherein,

B is selected from the group consisting of adenine, guanine, uracil, thymine, cytosine, inosine, 5-methylcytosine;

Y at the internucleotide phosphate linkage is selected from the group consisting of oxygen, sulfur, methyl, amino, alkylamino, dialkylamino (the alkyl group having one to about 20 carbon atoms), methoxy, and ethoxy; and

X at the furanose ring (position 4') is selected from the group consisting of oxygen, sulfur, and methylene (CH_2).

Claim 4 (currently amended): The composition of any one of claims ~~1~~ 2 and 3, wherein said RNA is complementary RNA.

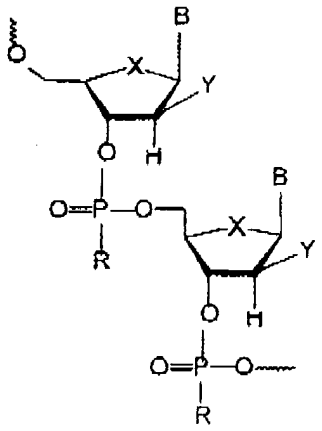
Claim 5 (original): The composition of claim 4, wherein said complementary RNA is cellular mRNA or viral RNA.

Claim 6 (currently amended): The composition of any one of claims ~~1~~ 2 and 3, wherein said acceptable carrier is a pharmaceutically acceptable carrier for administration to a host.

Claims 7-17 (withdrawn)

Claim 18 (canceled)

Claim 19 (currently amended): ~~The oligonucleotide of claim 18,~~ An oligonucleotide for selectively preventing gene transcription and expression in a sequence-specific manner in a host; which comprises an oligonucleotide consisting of β-arabinose sugars hybridizing to a single stranded RNA to induce RNase H activity; and an oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring with halogen, alkyl, CH_2F, CF_3, SCH_3, allyl, amino, aryl, alkoxy, or azido and hybridizing to duplex DNA/DNA or DNA/RNA to form a triple helical complex; and at least one 2-O-methyl-D-ribose sugar at 3', 5' or both terminus of said oligonucleotide, wherein said oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring has the formula:



wherein,

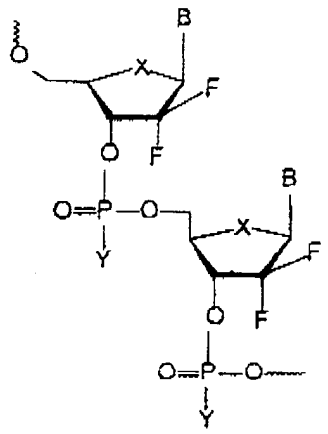
B is selected from the group consisting of adenine, guanine, uracil, thymine, cytosine, inosine, and 5-methylcytosine;

Y at the 2' position of the sugar ring is selected from the group consisting of a halogen ~~(fluorine, chlorine, bromine, iodine)~~, alkyl, ~~alkylhalide (e.g., CH_2F, CF_3)~~, ~~alkylsulfhydryl (-SCH_3)~~, allyl, amino, aryl, alkoxy, and azido;

R at the internucleotide phosphate linkage is selected from the group consisting of oxygen, sulfur, methyl, amino, alkylamino, dialkylamino (the alkyl group having one to about 20 carbon atoms), methoxy, and ethoxy; and

X at the furanose ring (position 4') is selected from the group consisting of oxygen, sulfur, and methylene (CH_2).

Claim 20 (currently amended): ~~The oligonucleotide of claim 18,~~ An oligonucleotide for selectively preventing gene transcription and expression in a sequence-specific manner in a host; which comprises an oligonucleotide consisting of β-arabinose sugars hybridizing to a single stranded RNA to induce RNase H activity; and an oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring with halogen, alkyl, CH_2F, CF_3, SCH_3, allyl, amino, aryl, alkoxy, or azido and hybridizing to duplex DNA/DNA or DNA/RNA to form a triple helical complex; and at least one 2-O-methyl-D-ribose sugar at 3', 5' or both terminus of said oligonucleotide, wherein said oligonucleotide consisting of β-arabinose sugars substituted at 2' position of the sugar ring has the formula:



wherein,

B is selected from the group consisting of adenine, guanine, uracil, thymine, cytosine, inosine, 5-methylcytosine;

Y at the internucleotide phosphate linkage is selected from the group consisting of oxygen, sulfur, methyl, amino, alkylamino, dialkylamino (the alkyl group having one to about 20 carbon atoms), methoxy, and ethoxy; and

X at the furanose ring (position 4') is selected from the group consisting of oxygen, sulfur, and methylene (CH_2).

Claims 21-30 (canceled)

Claim 31 (new): The composition of claim 2, wherein said halogen is selected from the group consisting of fluorine, chlorine, bromine and iodine.

Claim 32 (new): The composition of claim 3, wherein said halogen is selected from the group consisting of fluorine, chlorine, bromine and iodine.

Claim 33 (new): The composition of claim 19, wherein said halogen is selected from the group consisting of fluorine, chlorine, bromine and iodine.

Claim 34 (new): The composition of claim 20, wherein said halogen is selected from the group consisting of fluorine, chlorine, bromine and iodine.